

REMARKS

Claims 68-93 are now pending in this application. Claims 32-67 are rejected. Claims 32-67 are cancelled herein. Claims 1-31 are previously cancelled. New claims 68 are added. Method claim 68 reflects subject matter previously presented in claims 32 and 47. Apparatus claim 82 reflects the subject matter of former claims 54 through 56. The remaining dependent claims reflect those previously presented.

CLAIM REJECTIONS UNDER 35 U.S.C. § 112, FIRST PARAGRAPH, ENABLEMENT REQUIREMENT

Claims 36-47, 49, 51 and 53 are rejected under 35 U.S.C. § 112, first paragraph, as not being enabled by the specification. These claims are now cancelled rendering the rejections moot. The new claims do not reflect the first and second grinding machine with two stations on the second grinding machine, an arrangement considered by the Examiner not to be enabled. It is however, submitted that such an arrangement is enabled by the originally filed claims in this application and applicant reserves to right to pursue claims directed to such an arrangement in further prosecution.

CLAIM REJECTIONS UNDER 35 U.S.C. §103(a)

Claims 32-67 are rejected under 35 U.S.C. §103(a) as obvious over the Sano reference in view of the Bernstein reference. Claims 32-67 are now cancelled rendering their rejection moot. However, insofar as the subject matter of new claims 68-93 reflects that of some of the cancelled claims 32-67, and in the event the Examiner considers asserting the present rejection against the new claims or making the next Office Action final, applicants submit the following remarks.

Claim 68 is a method claim directed to the straightening of assembled camshafts. As stated in the claim, an assembled cam shaft includes a steel tube and the steel tube has a bend which must be straightened. Neither the Sano reference nor the Bernstein reference relate to straightening assembled camshafts. Instead, the Bernstein reference relates to crankshafts that are not assembled but rather are cast whole. The Bernstein reference teaches producing compressive residual stresses in a surface layer to straighten the conventional crankshaft. The Sano reference teaches measuring an eccentricity and grinding a conventional crankshaft to correct the eccentricity.

In contrast, the method presented in claim 68 is for straightening an assembled camshaft. In an assembled camshaft the steel tube is subject to bending and the bends must be corrected. The present invention is directed to correcting this problem associated with assembled camshafts. The applied references do not

teach the straightening of an assembled camshaft by deforming the steel tube. The specification identifies the difficulties associated with such camshafts in the following explanation:

Processing, i.e. grinding, of such assembled camshafts occurs in one or a plurality of chuckings. If it is possible to chuck the camshaft at the same locations, it is not important for the final quality of the produced camshafts whether the work is performed with two or more chuckings or even with one chucking. Another problem with assembled camshafts is that during grinding of the bearings and the cam shape the workpieces become out of true because of the energy added, because of the grinding process itself, and because of the grinding of the hardened surfaces of the cams. This process is known per se. In those workpieces that have been joined cold and that have been hardened on their surfaces such as for instance the cam surfaces, these influences release at least some of the tensions contained in the material during grinding. These tensions then lead to the shaft becoming out of true. This means that the camshaft is no longer straight after grinding; that is, a so-called out-of-true or eccentricity occurs that in particular is increased at the inner bearings, even if only by a few hundredths of a millimeter. This increase in the eccentricity is ultimately responsible for the camshaft no longer staying within the required tolerances with certainty.

As one skilled in the art will appreciate, the bending of assembled camshafts is resultant from features specifically resulting from the construction of the assembled camshaft. Since the applied references are not directed to such camshafts they cannot teach the method of the present invention.

Independent method claim 68 recites the step of:

straightening the assembled camshaft on said grinding machine, wherein the straightening comprises subjecting the

camshaft in an area to pressure beyond a yield point of steel of said steel tube.

The applied references are devoid of such a teaching. As such it is submitted that the method being for straightening assembled camshafts and the step of applying pressure beyond the yield point of the steel of the steel tube are not taught by the art applied and thus render the claim nonobvious.

Furthermore, claim 68 presents subject matter previously presented in claim 47. This subject matter, i.e., applying pressure beyond the yield point of a steel tube of an assembled camshaft was not at all addressed in the Office Action. Hence, it is submitted that a *prima facie* case of obvious was not set forth, that claim 68 is not significantly different from claim 47 and therefore any further rejection of claim 68 on different grounds cannot be made final.

Independent apparatus claim 82 sets forth an apparatus for practicing the method of the invention which is specifically tailored to the method. Claim 82 recites the following combination of elements not found in the applied art:

said grinding machine including a concentricity measuring device for measuring concentricity or concentricity deviation of said camshaft;

said grinding machine including a device for straightening the assembled crankshaft between and/or after grinding, said straightening device being configured to apply straightening force to the assembled camshaft, based on a measured concentricity or concentricity deviation, which is sufficient to subject the camshaft in an area to pressure beyond a yield point of steel of said steel tube[.]

Neither of the applied references are directed to an assembled camshaft. Straightening such a camshaft according to the method requires an apparatus having the above noted features. As related above, the Sano reference corrects eccentricity through grinding while the Bernstein reference uses pressures producing compressive residual stresses in a surface layer to straighten the conventional crankshaft. Thus, these references cannot teach the features presented in claim 82.

Dependent claims 69-81 and 83-93 are added and are submitted as patentable over the cited art of record and are submitted as patentable based on the subject matter cited therein in addition to the subject matter of their respective base claims. In particular, attention is directed to the use of dual rollers presented in claim 90 and the prismatic shaped pressure element of claim 92.

REQUEST FOR EXTENSION OF TIME

Applicant respectfully requests one month extension of time for responding to the Office Action. Please charge the fee of \$120.00 for the extension of time to Deposit Account No. 10-1250.

If there is any discrepancy between the fee(s) due and the fee payment authorized in the Credit Card Payment Form PTO-2038 or the Form PTO-2038 is missing or fee payment via the Form PTO-2038 cannot be processed, the USPTO is

hereby authorized to charge any fee(s) or fee(s) deficiency or credit any excess payment to Deposit Account No. 10-1250.

In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited.

Respectfully submitted,
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